

REMARKS

I. Introduction

With the cancellation herein without prejudice of claim 11, claims 10 and 12 to 18 are pending in the present application. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

Applicants note with appreciation the acknowledgment of the claim for foreign priority and the indication that all copies of the certified copies of the priority documents have been received from the International Bureau.

Applicants thank the Examiner for considering the previously filed Information Disclosure Statement, PTO-1449 paper and cited references.

II. Rejection of Claims 10, 11, and 14 to 18 Under 35 U.S.C. § 102(b) -- Willman et al.

Claims 10, 11, and 14 to 18 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 4,077,374 ("Willman et al."). It is respectfully submitted that Willman et al. do not anticipate the present claims as amended herein for at least the following reasons.

As an initial matter, claim 11 has been cancelled herein without prejudice, thereby rendering moot the present rejection with respect to claim 11.

Claim 10 relates to a fuel injector for direct injection of fuel into a combustion chamber of an internal combustion engine. Claim 10 has been amended herein without prejudice to include all of the features of claim 11, which has been canceled herein without prejudice. As such, claim 10 recites that a first volume has a longitudinal cross-sectional area (A_g) and that a coefficient B

characterizing the first volume is calculated according to the equation $B = \frac{|D \cdot \pi \cdot A_g|}{|d \cdot \pi \cdot s|}$,

wherein D is a first diameter between centers of mass of a longitudinal cross-sectional area A_g , d is a second diameter of a fuel jet at a midpoint of distance s , and B is a coefficient being not smaller than 0.5 and not greater than 2.5. Willman et al. do not disclose, or even suggest, at least a coefficient B characterizing a first volume being calculated according to the equation as set forth in amended claim 10 and being not smaller than 0.5 and not greater than 2.5. The Office Action does not

even allege that Willman et al. disclose, or even suggest, this feature. As such, it is respectfully submitted that Willman et al. do not anticipate amended claim 10.

As for claims 14 to 18, which ultimately depend from claim 10 and therefore include all of the features recited in claim 10, it is respectfully submitted that Willman et al. do not anticipate these dependent claims for at least the same reasons more fully set forth above in support of the patentability of claim 10.

In view of the foregoing, withdrawal of this rejection is respectfully requested.

**III. Rejection of Claims 10, 11, and 13
Under 35 U.S.C. § 102(b) -- Pontoppidan et al.**

Claims 10, 11, and 13 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,694,898 ("Pontoppidan et al."). It is respectfully submitted that Pontoppidan et al. do not anticipate the present claims as amended herein for at least the following reasons.

As indicated above, claim 11 has been cancelled herein without prejudice, thereby rendering moot the present rejection with respect to claim 11.

Pontoppidan et al. do not disclose, or even suggest defining a first volume between a fuel jet and an inner wall of an exit region of valve seat body wherein the first volume is defined according to the equation $B = \frac{|D \cdot \pi \cdot Ag|}{|d \cdot \pi \cdot s|}$, B being a coefficient not smaller than 0.5 and not greater than 2.5

As such, it is respectfully submitted that Pontoppidan et al. do not anticipate amended claim 10.

As for claim 13, which depends from claim 10 and therefore includes all of the features recited in claim 10, it is respectfully submitted that Pontoppidan et al. do not anticipate this dependent claim for at least the same reasons more fully set forth above in support of the patentability of claim 10.

In view of the foregoing, withdrawal of this rejection is respectfully requested.

IV. Rejection of Claim 12 Under 35 U.S.C. § 103(a)

Claim 12 was rejected under 35 U.S.C. § 103(a) as unpatentable over Willman et al. or Pontoppidan et al. Applicant respectfully submits that neither

Willman et al. nor Pontoppidan et al. render unpatentable the present claims for at least the following reasons.


Claim 12 depends from claim 10 and therefore includes all of the features included in claim 10. As more fully set forth above, neither Willman et al. nor Pontoppidan et al. disclose, or even suggest, all of the features recited in claim 10, from which claim 12 depends. As such, it is respectfully submitted that neither Willman et al. nor Pontoppidan et al. render unpatentable the present claims. Accordingly, withdrawal of the present rejection is respectfully requested.

V. Conclusion

It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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